

PROGNOSIS

Review: patients who have schizophrenia have increased mortality from all causes, natural causes, and unnatural causes

Brown S. *Excess mortality of schizophrenia. A meta-analysis.* *Br J Psychiatry* 1997 Dec;171:502–8.

Question

What is the mortality rate in patients who have schizophrenia?

Data sources

Studies were identified by searching Medline and BIDS Gateway (1986–96) and scanning the bibliographies of relevant studies.

Study selection

Studies were selected if they were cohort studies published in English or French, were peer reviewed, had > 100 patients, had ≥ 2 years of follow up, had $\geq 85\%$ of patients complete the study follow up, and the number of observed and expected deaths could be calculated.

Data extraction

The number of observed and expected deaths were extracted.

Main results

Meta-analytical techniques were used. 18 studies (61 161 patients) met the inclusion criteria. 10 260 deaths occurred and 6788 deaths were expected. Aggregate standardised mortality ratios (SMRs) were calculated by dividing the sum of the observed deaths by the sum of the expected deaths (derived from matched cohorts of the general population) and multiplying the result by 100. All cause, unnatural cause, and natural cause mortality were increased for patients who had schizophrenia (table). Of the excess mortality, 59% was accounted for by deaths from natural causes and 41% by deaths from unnatural causes. For specific natural causes, increases occurred in deaths from cardiovascular disease (SMR 110, 95% CI 105 to 115), respiratory disease (SMR 226, CI 209 to 244), digestive diseases (SMR 185, CI 164 to 208), genitourinary disease (SMR 161, CI 137 to 186), and other diseases (SMR 168, CI 157 to 180). Patients with schizophrenia had decreased mortality from cerebrovascular disease (SMR 81,

CI 73 to 87). No difference in the expected value existed for deaths from neoplastic disease, although men with schizophrenia had decreased mortality from neoplastic disease (SMR 86, CI 78 to 96). For deaths from unnatural causes, increases occurred for suicide (SMR 838, CI 784 to 894), which accounted for 28% of the excess mortality; accidents (SMR 216, CI 196 to 236), which accounted for 12% of the excess mortality; homicides (SMR 733, CI 363 to 1230), which accounted for 1% of the excess mortality; and deaths from undetermined causes (SMR 1430, CI 960 to 2130). Men with schizophrenia had higher all cause and unnatural cause mortality than women with schizophrenia (table). Men also had more deaths from suicides than women (SMR 956, CI 884 to 1031 *v* 673, CI 591 to 763).

Conclusions

Patients with schizophrenia have increased mortality from natural and unnatural causes. Suicide is the largest single cause of excess mortality for patients with schizophrenia.

Standardised mortality ratios (SMRs) for patients who have schizophrenia

Cause of death	Overall		Men		Women	
	SMR	95% CI	SMR	CI	SMR	CI
All causes	151	148 to 154	148	144 to 152	139	134 to 144
Natural causes	134	131 to 137	123	118 to 128	125	120 to 130
Unnatural causes	426	402 to 451	508	471 to 546	345	310 to 382

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Commentary

Suicide and premature natural or accidental death appear to share some risk factors.¹ The review by Brown suggests that a diagnosis of schizophrenia is a proxy for some of the shared risk factors underlying these outcomes, in view of the excess of suicidal death on the one hand, and premature accidental and natural death on the other hand.

There is substantial geographical variation in the rate of premature death. If, compared with area A, the rate of suicide in area B is changed by the same amount in people without schizophrenia and in schizophrenic patients, the relative risk for suicide associated with schizophrenia will also vary between area A and area B. The risk for suicide in patients with schizophrenia is therefore dependent on

the population base rate. The heterogeneity among the reviewed studies suggests that such mechanisms are at work.

Brown makes separate cases for the reduction of suicidal death and premature natural death. However, attempts to reduce excess premature natural death through a prevention programme in patients with schizophrenia may not necessarily reduce mortality even if the programme were 100% successful. Because of the aetiological continuity between suicide and other premature death, reduction of premature natural deaths may actually be replaced by accidental or suicidal deaths.² Thus, instead of being selective, the intervention should focus on all adverse outcomes.

Brown highlights the need to identify high risk patients. Suicide can also be pre-

vented, however, by reducing risk factors in the whole patient population regardless of risk status. Thus, clinicians who routinely provide treatment to help patients with schizophrenia cope with hopelessness and depression; never prescribe the more toxic antidepressants; and make sure that their patients are prescribed paracetamol only in small quantities, may make a substantial contribution to the reduction of suicide without ever specifically targeting high risk patients.

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1 Neeleman J, Wessely S, Wadsworth M. *Lancet* 1998;351:93–7.

2 Deyfitz N. *Am J Public Health* 1978;68:654–6.